



APPLIED MEASUREMENTS LTD.
Transducer Specialists...

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AML/SGD Strain Gauge Displacement Transducer

Key Features:

- Stroke Ranges: 0-5mm to 0-100mm
- mV/V Output
- Environmental Protection: IP54
- Spring Loaded
- High Accuracy: $<\pm 0.1\%$ (0-5mm to 0-25mm)
 $<\pm 0.2\%$ (0-50mm to 0-100mm)
- Strain Gauge Based Design
- Compact Size - Simple to Install
- 3 Year Warranty



Click to watch product video

The [AML/SGD strain gauge displacement transducers](#) utilise strain gauge technology to provide a linearly proportional voltage output in relation to the movement of a captivated spindle. The AML/SGD's compact size and rugged construction makes them ideal for use in a diverse range of applications such as Geotechnical Testing, R&D, Aerospace, Civil Engineering and Automotive.

The AML/SGD strain gauge displacement transducer offers excellent accuracy of better than 0.1% on ranges up to 0-25mm and 0.2% on the 0-50mm and 0-100mm versions, coupled with high resolution and long-term stability.

The design principle incorporates a 4-arm active wheatstone bridge with a nominal impedance of 350ohms. This concept ensures an excellent non-linearity, good temperature stability and low current consumption. This low current consumption makes the AML/SGD suitable for use in battery-powered systems and equipment.

Being strain gauge based, they are compatible with a broad range of standard analogue and digital instrumentation as used on load cells, pressure transducers and torque sensors.

[See our range of displacement transducers.](#)

Options:

- Customised Versions
- Longer Cable Lengths
- In-Line Analogue Signal Conditioner (ICA)
- USB Version (via DSC-USB)
- Vacuum Application Version
- Wider Operating Temperature Range
- Wireless Version (via T24 instrumentation)
- Single or Multi-Channel PC-Based Monitoring & Data Logging System.
- TEDS (Transducer Electronic Data Sheet)
- TEDS Allows Plug & Play with TEDS Enabled Instrumentation.

Applications:

- Geotechnical Testing Material Testing Machines
- Research & Development
- Aerospace
- Civil Engineering
- Automotive



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Specification:

| CHARACTERISTICS | AML/SGD | | | | | UNITS |
|---|---|------|-------|------|-------|-----------------------|
| Stroke Length: | 0-5 | 0-10 | 0-25 | 0-50 | 0-100 | millimetres |
| Rated Output: | 5.0 | 5.4 | 7.3 | 8.8 | 7.5 | mV/V (nominal) |
| Non-Linearity: | <0.10 | | <0.20 | | | ±% of Rated Output |
| Repeatability: | <0.10 | | | | | ±% of Rated Output |
| Operating Temperature Range: | -10 to +60 | | | | | °C |
| Temperature Effect On Output: | <0.010 | | | | | ±% of Rated Output/°C |
| Temperature Effect On Zero: | <0.010 | | | | | ±% of Rated Output/°C |
| Safe Overload: | See note 4 below | | | | | |
| Excitation: | 10 recommended (2-15 acceptable) | | | | | Volts AC or DC |
| Current Consumption: | <30 @ 10Vdc | | | | | mA |
| Input Resistance: | 350 | | | | | Ohms (nominal) |
| Output Resistance: | 350 | | | | | Ohms (nominal) |
| Insulation Resistance: | >2000 | | | | | Megohms |
| Output Bandwidth: | 100 | | | | | Hz (nominal) |
| Spring Force: | 50-250 (100-400 on 100mm) | | | | | gf (progressive) |
| Construction: | Stainless Steel/Aluminium | | | | | |
| Environmental Protection: | IP54 | | | | | |
| Cable: | 2 Metre 4 Core Screened, bend radius 10mm | | | | | |
| Weight (excluding cable): | 125 | 130 | 140 | 180 | 320 | grams |
| Operational Notes: 1. The outer case must not be distorted when clamping the sensor. A full diameter clamp is advised. 2. The sensor is not recommended for use in hostile environments without additional protection. 3. Special tools are required to remove the plunger tip (anvil) to avoid damage to the spindle. 4. With the plunger tip (anvil) attached this forms a positive overload protection stop. If the anvil is removed, the threaded end of the plunger must not be allowed to enter the case. | | | | | | |

Wiring Diagram:

| Wire | Designation |
|--------|---|
| Red | +ve excitation |
| Blue | -ve excitation |
| Green | +ve signal |
| Yellow | -ve signal |
| Screen | To ground - not connected to load cell body |



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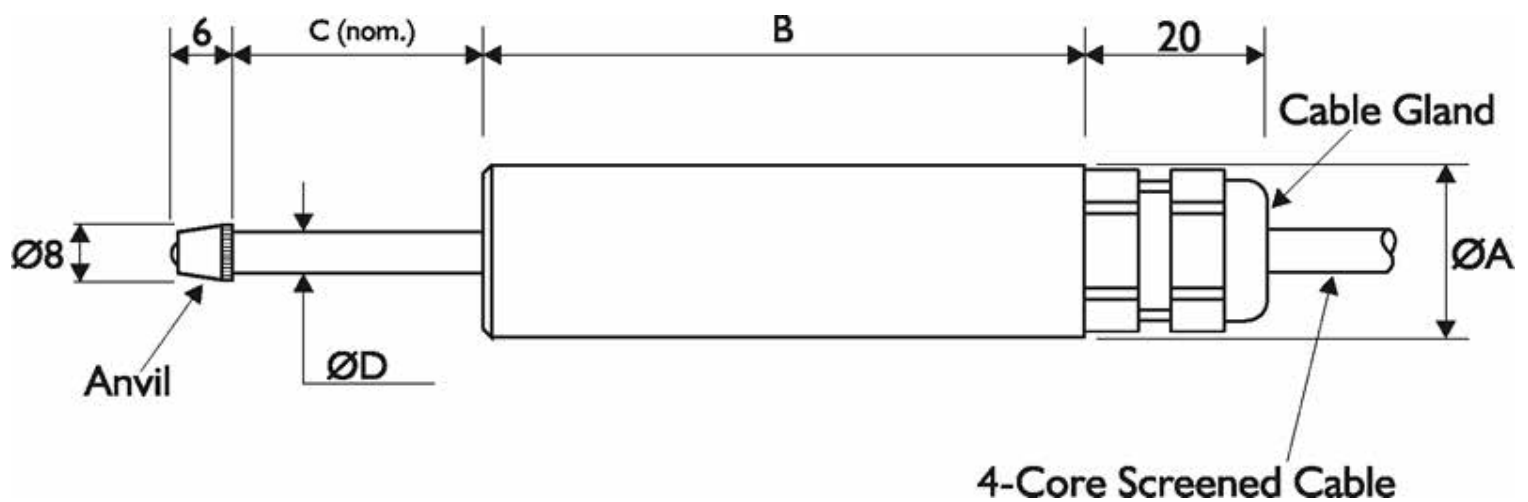
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Dimensions (mm):

| Stroke Range | ØA | B | C | ØD |
|--------------|------|------|-----|-----|
| 5mm | 17.4 | 78.5 | 6 | 4.8 |
| 10mm | 17.4 | 78.5 | 11 | 4.8 |
| 25mm | 17.4 | 94 | 26 | 4.8 |
| 50mm | 17.4 | 155 | 51 | 4.8 |
| 100mm | 25.4 | 264 | 102 | 4.8 |



Ordering Codes:

| AML/SGD-25mm-002-000 | AML/SGD | - | 25mm | - | 002 | - | 000 |
|---|---------|---|-------|---|-----|---|-----|
| <i>Example Code</i> | | | | | | | |
| Product Family | | | | | | | |
| AML/SGD | AML/SGD | | | | | | |
| Capacity / Range including eng. units) | | | | | | | |
| 5mm (0-5mm) | | | 5mm | | | | |
| 10mm (0-10mm) | | | 10mm | | | | |
| 25mm (0-25mm) | | | 25mm | | | | |
| 50mm (0-50mm) | | | 50mm | | | | |
| 100mm (0-100mm) | | | 100mm | | | | |
| Cable Length (in metres) | | | | | | | |
| 0,2 = 0.2 metres | | | | | 0.2 | | |
| 002 = 2 metres | | | | | 002 | | |
| Specials Code | | | | | | | |
| 000 = Standard Product (as per datasheet) | | | | | | | 000 |



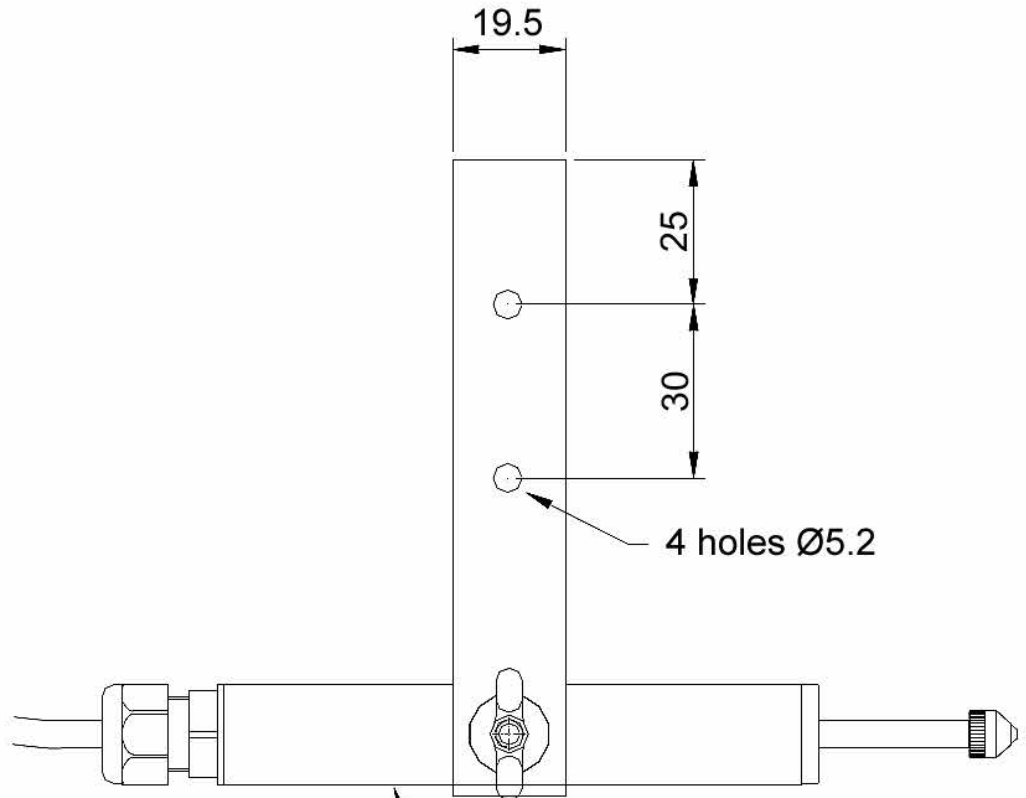
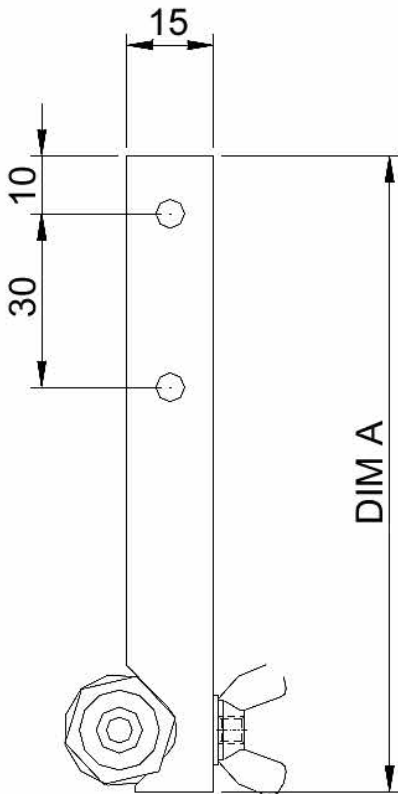
AML/SGD Displacement Sensor Mounting Clamps:

Single End Clamp Types:

- SMC 17
- SMC 20
- SMC 25

Materials Clamp Bar Anodised Aluminium
Ring & Fixings Stainless Steel

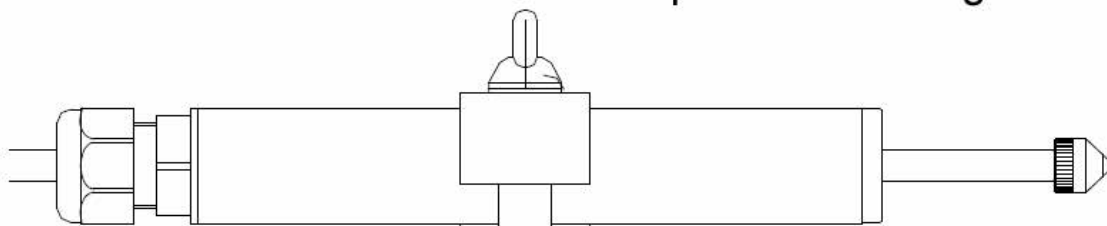
Note: Clamp bar can be machined to suit applications.



Displacement sensor shown for reference only

| Type | DIM A | Sensor Diameter |
|--------|-------|-----------------|
| SMC-17 | 110 | Ø17.4 |
| SMC-19 | 110 | Ø19 |
| SMC-25 | 115 | Ø25.4 |

Wing nut can be replaced by M5 full nut for permanent fixing



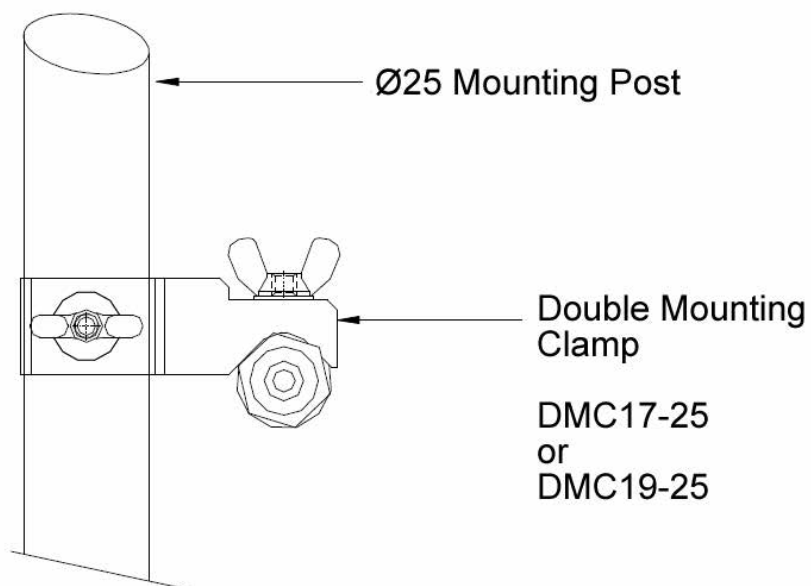
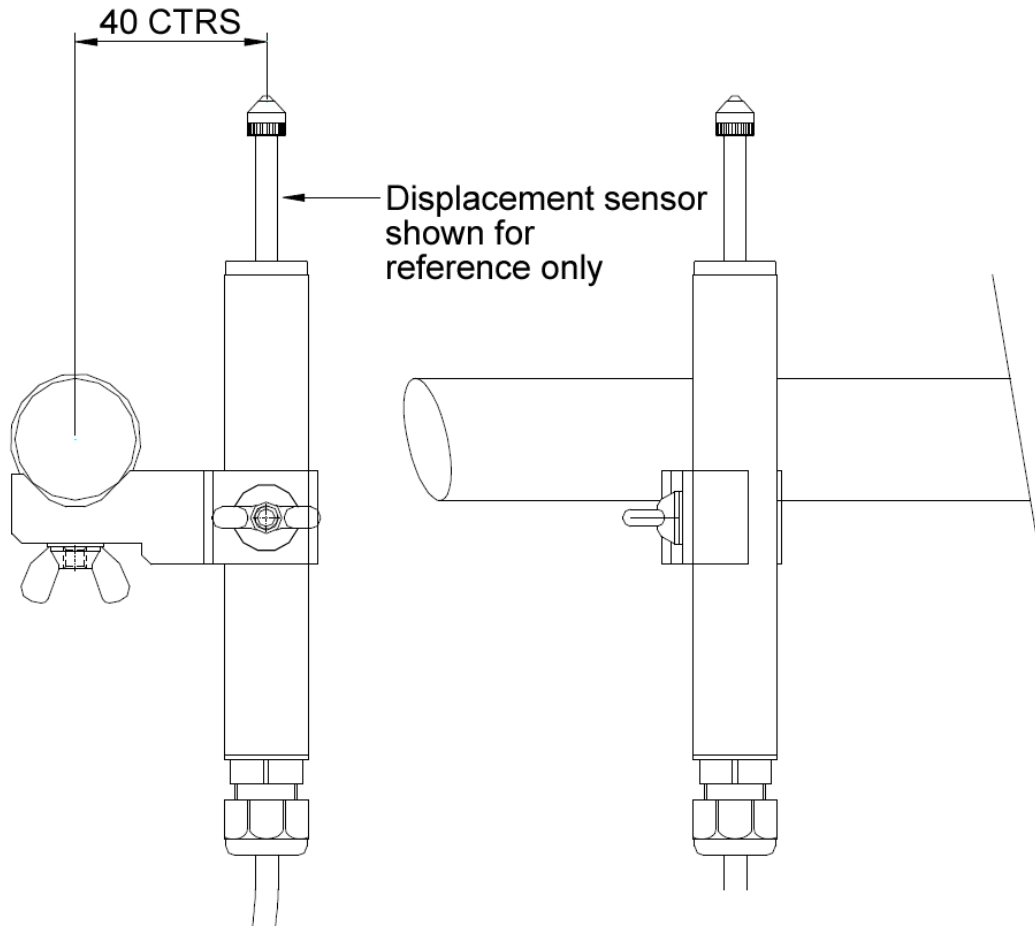


AML/SGD Displacement Sensor Mounting Clamps:

Double End Clamp Types:

- DMC 17-25
- DMC 19-25

Materials Clamp Bar Anodised Aluminium
Ring and Fixings Stainless Steel





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Clamp Ordering Codes:

| Code | Details |
|---------------|--|
| AML/SGD-DMC17 | Double mounting clamp for AML/SGD 5-50mm post clamp |
| AML/SGD-DMC25 | Double mounting clamp for AML/SGD-100mm with 19mm post clamp |
| AML/SGD-SMC17 | Mounting clamp for AML/SGD 5mm to 50mm ranges |
| AML/SGD-SMC25 | Mounting clamp for AML/SGD-100mm |



Image of SMC mounting clamps

Associated Products:



[TR150 Handheld Indicator](#)



[T24 Wireless Telemetry Range](#)



[Intuitive4-L Panel-Mount Indicator](#)



[DSC-USB USB Signal Digitiser](#)



[ICA Miniature Strain Gauge Amplifier](#)



[SGA Signal Conditioner/Amplifier](#)



[FUSION Large Digital Display](#)